Ulster Med J 2009; **78 (1)** 59-61

Abstracts

Junior Members Forum, Thursday 22 November 2007

Ulster Medical Society rooms, Whitla Medical Building, Belfast

PROGRAMME

Of the submissions, the following 5 were shortlisted for platform presentations:

1. Chronic Kidney Disease associated with mortality in Northern Ireland - Dr M Quinn
2. Metformin, Chronic Kidney Disease and Lactic Acidosis: Is metformin absolutely contraindicated? - Dr MC McCloskey
3. Folic Acid use and major congenital malformations in offspring of women with epilepsy. A prospective study from The UK Epilepsy and Pregnancy Register - Dr SJ Hunt
4. Indications for Revision Total Hip Replacement in Northern Ireland - Dr Ciara Stevenson
5. Randomised Controlled Trial to assess the vascular and biochemical effects of Cilostazol in patients with peripheral arterial disease - Mr M O'Donnell

The following 16 were shortlisted for poster presentations:

1. Transient Cardiomyopathy as presenting feature of Acute Disseminated Encephalomyelitis - Dr E Mawhinney
2. Posterior Leucoencephalopathy Syndrome in a post-partum patient - Dr KM McKnight
3. An audit of intravenous immunoglobulin use in the NI Neurology Department - Dr E Devenney
4. Usefulness of a District General Neurologist in the diagnosis of non-organic illness - Dr A Fitzpatrick
5. Octreotide scanning in the detection of metastatic renal cell carcinoma - Dr MC McCloskey
6. Carbon Monoxide Poisoning - Dr A Hammond
7. Radical Trachelectomy: a case series - Dr N Ratnavelu
8. Are alcohol related acute surgical admission rates falling? - Dr GJ Fitzmaurice
9. Improving outcomes in squint surgery - Dr MK O'Gallagher
10. Management of hypoglycaemia in Intensive Care: a prospective audit - Dr Lloyd Turbitt
11. The two-week rule help or hindrance? - Dr RS McCain
12. The documentation, interpretation and management of abnormal fetal heart rates in labour - Dr M McCauley
13. Indolent thyroid metastasis from renal cell carcinoma presenting after a remarkable 24 year latency following nephrectomy - Dr G McLean
14. Accuracy and role of ultrasonography in assessing shoulder pathology - Dr KW Chan
15. Analgesia and function following subacromial decompression - Dr J Campbell
16. The effect of modernising medical careers on junior medical doctor personality, anxiety and career choice - Mr M O'Donnell

The winner of the platform, poster and the remaining platform abstracts are published below:

PLATFORM PRESENTATION WINNER:

CHRONIC KIDNEY DISEASE ASSOCIATED WITH MORTALITY IN NORTHERN IRELAND

M Quinn[1], C Cardwell[2], G Savage[2], AP Maxwell[1], F Kee[2], D Fogarty[1]

Departments of [1]Nephrology, and [2]Public Health and Epidemiology, The Queen's University of Belfast

Introduction: We investigated the association between chronic kidney disease (CKD) and mortality in Northern Ireland (NI).

Methods: All creatinine results in NI between 1st Jan 2001 - 31st Dec 2002 were collected and linked to a patient database. Estimated glomerular filtration rates (eGFR) were calculated using the 4 variable modified diet in renal disease equation. The Registrar Generals office provided all cause and cardiovascular mortality follow up through to 31st Dec 2006.

Results: 2,065,694 creatinine results from 585,566 patients were collected. 60,209 deaths occurred. Using eGFR as time varying covariate in a Cox survival model the following association between CKD and mortality was demonstrated.

Adjusted† hazard ratios (CI 95%) for mortality		
eGFR	All cause	Cardiovascular
> 60 ml/min/1.73m^2	1.00 (Ref)	1.00 (Ref)
45 - 59 ml/min/1.73m^2	1.01 (0.99-1.03)	0.98 (0.92-1.02)
30 - 44 ml/min/1.73m^2	1.45 (1.41-1.48)	1.43 (1.38-1.45)
15 - 29 ml/min/1.73m^2	2.19 (2.11-2.27)	2.26 (2.13-2.40)
< 15 ml/min/1.73m^2	3.45 (3.23-3.68)	4.35 (3.93-4.80)
†Adjusted for Age and Sex		

Conclusions: This study demonstrates a graded association between CKD and mortality in the tested NI population. Having previously calculated the prevalence of CKD (eGFR < 60 ml/min/1.73m^2) in NI as 3.69%[1]; this work indicates the clinical and public health importance of CKD.

REFERENCE:

1. Quinn, MP, Rainey A, Cairns KJ *et al.* The practical implications of using standardized estimation equations in calculating the prevalence of chronic kidney disease. *Nephrol Dialysis Transplantation* 2008;23(2):542-548.

PLATFORM PRESENTATION RUNNERS UP:

METFORMIN, CHRONIC KIDNEY DISEASE, AND LACTIC ACIDOSIS: IS METFORMIN ABSOLUTELY CONTRAINDICATED?

MC McCloskey, J Smyth, W Marshall, N Leonard

Renal Unit, Ulster Hospital, Dundonald, Belfast, Northern Ireland

Aims: The UK prospective diabetes study showed that metformin was associated with a lower mortality from cardiovascular disease than sulphonylureas or insulin in obese patients with type 2 diabetes mellitus, as well as reduced all cause mortality. However, concerns remain about its side effects, especially the perceived risk of lactic acidosis in the presence of chronic kidney disease (CKD). This may result in many patients with type 2 diabetes being denied metformin therapy[1,2]. We aimed to assess the incidence of metformin induced lactic acidosis over a seven year period, within our hospital.

Methods: Data was retrieved from a computerised database, laboratory records and individual case note review for patients admitted over a 7-year period, from 01/01/2000 until 31/12/2006. Diagnostic codes searched included metabolic acidosis, lactic acidosis, metformin, or glucophage. Renal function at presentation, at baseline, and the presence of a clearly identified precipitating illness were recorded (N = 205 401).

Results: Three cases of lactic acidosis in patients prescribed metformin were identified. Each case had a precipitating illness; dehydration secondary to gastroenteritis in 2 cases and urinary sepsis in 1 case. Only one patient had baseline CKD (creatinine of 135mmol/l).

Discussion: The incidence of metformin induced lactic acidosis reported in this study is significantly lower than predicted in the literature, which quotes an estimated incidence of 0 – 0.09 cases per 1000 pt years[1,2].

A Cochrane review of 206 comparative trials and cohort studies in patients with type 2 diabetes who were treated with metformin and had no contraindications to its use, found no evidence of increased risk of developing fatal/non-fatal lactic acidosis in metformin treated patients. They also found no difference in lactate concentrations between metformin and non-biguanide treated patients. Several reports found that physicians have increasingly ignored contraindications to prescribing metformin and yet the incidence of lactic acidosis has remained very low. The majority of case reports relating metformin to lactic acidosis report at least one other disease/acute illness that could result in lactic acidosis[1,2]. In our analysis each case had a precipitating illness.

Metformin provides a greater degree of cardiovascular protection than expected from antihyperglycaemic actions alone, and is the drug of choice for persons with type 2 diabetes. Further studies are required in order to accurately quantify the risk, if any, of metformin induced lactic acidosis in persons with CKD[1,2].

REFERENCES:

1. Jones *et al.* Contraindications to the use of metformin. *BMJ* 2003;326(7379):4

2. Tahrani *et al*. Metformin, heart failure, and lactic acidosis: is metformin absolutely contraindicated? *BMJ* 2007;335:508-512.

FOLIC ACID USE AND MAJOR CONGENITAL MALFORMATIONS IN OFFSPRING OF WOMEN WITH EPILEPSY. A PROSPECTIVE STUDY FROM THE UK EPILEPSY AND PREGNANCY REGISTER.

SJ Hunt, AJ Russell, WH Smithson, L Parsons, I Robertson, R Waddell, B Irwin, PJ Morrison, JJ Craig, JI Morrow

Objective: In the general population folic acid supplementation during pregnancy has been demonstrated to reduce the frequency of major congenital malformations (MCMs) such as neural tube defects (NTDs). Women with epilepsy contemplating pregnancy are advised to take supplemental folic acid due to the known anti-folate effect of some anti-epileptic drugs

(AEDs). Here we aim to determine effectiveness of this practice.

Methods: Prospective, observational, registration and follow-up study. Cases are women with epilepsy who become pregnant and who are referred before outcome of the pregnancy is known. The main outcome measure is the MCM rate.

Results: In 1,935 cases reported to have received pre-conceptual folic acid, 76 MCMs (3.9%;95% C.I. 3.1 - 4.9%) and eight NTDs (0.4%; 95% C.I. 0.2 - 0.8) were identified. For 2,375 women who were reported to have received folic acid but not until later in the pregnancy (n= 1,825) or not at all (n=550) there were 53 outcomes with an MCM (2.2%; 95% C.I. 1.7 - 2.9%) and eight NTDs (0.34%; 95% C.I. 0.2 - 0.7).

Conclusions: Extrapolation from studies carried out in the general population to groups of women with epilepsy may be questionable. The increased risk of MCM recorded in this group may occur through mechanisms other than that of folic acid metabolism.

INDICATIONS FOR REVISION TOTAL HIP REPLACEMENT IN NORTHERN IRELAND

CM Stevenson, BM Hanratty, MG McAlinden

Ulster Hospital Belfast

Within Northern Ireland we have investigated the indications for revision hip procedures, carried out from April 2006 to March 2007. This was to establish our indications for revision surgery and if these are comparable to other national registers. An audit of all hospitals that perform revision surgery was carried out and the indications for revision procedures established. Revision procedures included replacement of one or both components, application of acetabular augmentation devices, and open reduction and internal fixation of peri-prosthetic fractures. 180 patients were identified in six hospitals. Revisions were performed for a peri-prosthetic fracture in 38 (21%), infection in 12 (7%), recurrent dislocation in 23(13%) and in failure of implants in 107 (59%). Six hospitals in Northern Ireland (population 1.7 million) carry out revision hip surgery. The largest body of information on revision hip surgery is the Swedish Hip Registry. Their incidence for revision hip surgery is 7%. Their indications were: aseptic loosening 71%, infection 7.5%, fracture 5.6% and dislocation 4.8%. Our data indicate a greater prevalence of revision for recurrent dislocation (13%versus 4.8%), and peri-prosthetic fractures (21% versus 5.6%) than the Swedish data. Further work should aim to identify any remediable surgical factors, which account for these differences

RANDOMISED CONTROLLED TRIAL TO ASSESS THE VASCULAR AND BIOCHEMICAL EFFECTS OF CILOSTAZOL IN PATIENTS WITH PERIPHERAL ARTERIAL DISEASE

ME O'Donnell[1], SA Badger[1], MA Sharif[1], RR Makar[1], IS Young[2], LL Lau[1], B Lee[1], RJ Hannon[1], CV Soong[1].

Department of Vascular and Endovascular Surgery, Belfast City Hospital[1] and Department of Medicine, Queen's University Belfast[2], Northern Ireland.

Objectives: Cilostazol improves walking distance. The study aimed to assess vascular and biochemical effects of cilostazol in peripheral arterial disease (PAD) patients.

Methods: Patients were randomised in a double-blinded, placebo-controlled trial. Baseline clinical data were recorded following medical optimisation. Clinical assessment included ankle-brachial index (ABI), arterial compliance, peripheral trancutaneous oxygenation (TCO_2) and treadmill walking distance. Glucose homeostasis was assessed by fasting serum glucose and glycosylated haemoglobin levels along with lipid profiles. Quality of life (QoL) indices were recorded using the VascuQoL questionnaire. All tests were at baseline, 6- and 24-weeks.

Results: 106 PAD patients (M=73) were recruited from December 2004 to January 2006 (median age:66.5, range 37-86). Patients in both treatment limbs had similar baseline demographics, medical co-morbidities and walking performance. Patients who received cilostazol demonstrated a mean percentage improvement, in absolute claudication distance (77.2%vs.26.6% at 6-weeks and 161.7%vs.79.0% at 24-weeks, $p<0.05$). Arterial compliance improved at 6-weeks (-28.8%vs.-11.0%,$p=0.005$) and 24-weeks (-21.0%vs.-11.5%,$p=0.012$). There was no difference in ABI, TCO_2 or glucose homeostasis. Cilostazol reduced triglycerides at 6-and 24-weeks ($p<0.002$). Activity, symptom, pain, emotion and total VascuQoL indices improved in the cilostazol group at 24-weeks ($p<0.03$).

Conclusions: Maximal walking distance was improved by cilostazol in PAD patients with further beneficial effects in arterial compliance, lipid homeostasis and QoL.

POSTER PRESENTATION WINNER

THE "TWO-WEEK-RULE"; HELP OR HINDRANCE?

RS McCain, J Newell, SA Badger, RJ Kennedy, SJ Kirk.

Breast Surgery Unit, Ulster Hospital, Dundonald

Introduction: Breast cancer is a common malignancy. Department of Health guidelines state that all patients with suspected breast cancer should be referred urgently and seen by a specialist within two weeks of referral. The aim of this study was to assess referral patterns and clinical findings in patients referred to a specialist breast clinic within this context.

Methods: A prospective database was maintained for consecutive patients referred to a specialist breast clinic. Clinical findings in primary care and at the breast clinic were recorded and correlated with final diagnoses.

Results: Data were collected on 1098 patients. 588 (54%) were referred urgently, 285 (26%) routinely and 225 (20%) were unspecified. In many cases, referrals did not adhere to the "two-week-rule" guidelines. 86 patients (8%) were diagnosed with breast cancer. 72 (84%) of these were referred urgently, 6 (7%) routinely and 8 (9%) unspecified. Examination findings in primary and secondary care correlated in 487 (46%) patients.

Conclusions: A large number of sub-optimal referrals were made. Sensitivity and specificity of clinical examination in primary care was low. Nonetheless, with excellent examination and diagnostic skills, sensitivity of the two-week-rule could only reach 86%, suggesting that either the concept of urgent referral criteria or the criteria themselves are flawed.